Notice of Allowability	Application No.	Applicant(s)	
	09/875,521	O'TOOLE, JAMES W.	
	Examiner	Art Unit	
	Kenneth Tang	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the Amendment on 7/26/07 and the Examiner's Amendment on 10/10/07*.

2. ☒ The allowed claim(s) is/are *1-6 and 13-33; now renumbered as 1-27*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *10/10/07* .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

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EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James Thompson (Reg. No. 36,699) on 10/10/07.

The claims in the application has been amended as follows:

1. (Currently amended) A method in a data communications device for directing a request to process data, comprising the steps of:

maintaining cost information for a plurality of resources available to satisfy client requests via a plurality of resource providers, the cost information for each resource specifying a relationship between levels of usage of the resource in a billing interval and corresponding levels of prices charged by the respective resource provider in the billing interval;

maintaining usage information for the plurality of resources, the usage information for each resource specifying a level of usage of the resource that has been experienced during the billing interval;

receiving the request from a client;

generating, based on the usage information and an estimated request usage of the request, an estimated response usage for each resource of the plurality of resources that reflects a potential usage if responding to the request, each estimated response usage being associated, via the cost information, with a corresponding cost estimate for processing the request, a first cost estimate being a first cost increase for a first resource of the plurality of resources if the first resource responds to the request,

and a second cost estimate being a second cost increase for a second resource of the plurality of resources if the second resource responds to the request;

selecting a resource from said plurality of resources to process the request based on the respective cost estimate associated with said estimated response usage of each of said resources, the selecting including (1) comparing the first cost increase and the second cost increase to determine one of the first and second cost increases that has a lower cost increment, and (2) selecting one of the first resource and the second resource to respond to the request from the client based on the lower cost increment; and

forwarding the request to the selected resource.

3. (Currently amended) A data communications device for directing a request to process data, comprising:

a memory that stores a cost modeler application;

an interconnection mechanism; and

a processor coupled to the memory by the interconnection mechanism, wherein the processor operates in accordance with instructions of the cost modeler application stored in the memory to direct the request, the instructions of the cost modeler application configuring the processor to:

maintain cost information for a plurality of resources available to satisfy client requests via a plurality of resource providers, the cost information for each resource specifying a relationship between levels of usage of the resource in a billing interval and corresponding levels of prices charged by the respective resource provider in the billing interval;

maintain usage information for the plurality of resources, the usage information for each resource specifying a level of usage of the resource that has been experienced during the billing interval;

receive the request from a client;

generate, based on the usage information and an estimated request usage of the request, an estimated response usage for each resource of the plurality of resources that reflects a potential usage if responding to the request, each estimated response usage being associated, via the cost information, with a corresponding cost estimate for processing the request, a first cost estimate being a first cost increase for a first resource of the plurality of resources if the first resource responds to the request, and a second cost estimate being a second cost increase for a second resource of the plurality of resources if the second resource responds to the request;

select a resource from said plurality of resources to process the request based on the respective cost estimate associated with said estimated response usage of each of said resources, by (1) comparing the first cost increase and the second cost increase to determine one of the first and second cost increases that has a lower cost increment, and (2) selecting one of the first resource and the second resource to respond to the request from the client based on the lower cost increment; and

forward the request to the selected resource.

5. (Currently amended) A data communications device for directing a request to process data, comprising:

means for maintaining cost information for a plurality of resources available to satisfy client requests via a plurality of resource providers, the cost information for each resource specifying a relationship between levels of usage of the resource in a billing interval and corresponding levels of prices charged by the respective resource provider in the billing interval;

means for maintaining usage information for the plurality of resources, the usage information for each resource specifying a level of usage of the resource that has been experienced during the billing interval;

means for receiving the request from a client;

means for generating, based on the usage information and an estimated request usage of the request, an estimated response usage for each resource of the plurality of resources that reflects a potential usage if responding to the request, each estimated response usage being associated, via the cost information, with a corresponding cost estimate for processing the request, a first cost estimate being a first cost increase for a first resource of the plurality of resources if the first resource responds to the request, and a second cost estimate being a second cost increase for a second resource of the plurality of resources if the second resource responds to the request;

means for selecting a resource from said plurality of resources to process the request based on the respective cost estimate associated with said estimated response usage of each of said resources, the selecting including (1) comparing the first cost increase and the second cost increase to determine one of the first and second cost increases that has a lower cost increment, and (2) selecting one of the first resource and the second resource to respond to the request from the client based on the lower cost increment; and

means for forwarding the request to the selected resource.

6. (Currently amended) A computer program product that includes a computer readable medium having instructions stored thereon for directing a request to process data, such that the instructions, when carried out by a data communications device, cause the data communications device to perform the steps of:

maintaining cost information for a plurality of resources available to satisfy client requests via a plurality of resource providers, the cost information for each resource specifying a relationship between levels of usage of the resource in a billing interval and

corresponding levels of prices charged by the respective resource provider in the billing interval;

maintaining usage information for the plurality of resources, the usage information for each resource specifying a level of usage of the resource that has been experienced during the billing interval;

receiving the request from a client;

generating, based on the usage information and an estimated request usage of the request, an estimated response usage for each resource of the plurality of resources that reflects a potential usage if responding to the request, each estimated response usage being associated, via the cost information, with a corresponding cost estimate for processing the request, a first cost estimate being a first cost increase for a first resource of the plurality of resources if the first resource responds to the request, and a second cost estimate being a second cost increase for a second resource of the plurality of resources if the second resource responds to the request;

selecting a resource from said plurality of resources to process the request based on the respective cost estimate associated with said estimated response usage of each of said resources, the selecting including (1) comparing the first cost increase and the second cost increase to determine one of the first and second cost increases that has a lower cost increment, and (2) selecting one of the first resource and the second resource to respond to the request from the client based on the lower cost increment; and

forwarding the request to the one of the plurality of resources selected in the step of selecting.

13. (Currently amended) A method for selecting with a data communication device a resource from a plurality of resources to process a request from a client, comprising the

steps of:

maintaining cost information for a plurality of resources available to satisfy client requests via a plurality of resource providers, the cost information for each resource specifying a relationship between levels of usage of the resource in a billing interval and corresponding levels of prices charged by the respective resource provider in the billing interval;

maintaining usage information for the plurality of resources, the usage information for each resource specifying a level of usage of the resource that has been experienced during the billing interval;

generating, based on the usage information and an estimated request usage of the request, a usage metric for each resource of the plurality of resources;

generating an economic metric for each resource based on the cost information, the usage metric for each resource, and the request, a first economic metric being a first cost increase for a first resource of the plurality of resources if the first resource responds to the request, and a second economic metric being a second cost increase for a second resource of the plurality of resources if the second resource responds to the request; and

choosing with the data communication device one of the plurality of the resources to respond to the request for data based on a comparison of the economic metric for each resource, the choosing including (1) comparing the first cost increase and the second cost increase to determine one of the first and second cost increases that has a lower cost increment, and (2) selecting one of the first resource and the second resource to respond to the request from the client based on the lower cost increment.

21. (Currently amended) A data communication device for selecting a resource from a plurality of resources to process a request from a client, the data communication device comprising:

a memory that stores a cost modeler application;

an interconnection mechanism; and

a processor coupled to the memory by the interconnection mechanism, wherein the processor operates in accordance with instructions of the cost modeler application stored in the memory to select the resource, the instructions of the cost modeler application configuring the processor to:

maintain cost information for a plurality of resources available to satisfy client requests via a plurality of resource providers, the cost information for each resource specifying a relationship between levels of usage of the resource in a billing interval and corresponding levels of prices charged by the respective resource provider in the billing interval;

maintain usage information for the plurality of resources, the usage information for each resource specifying a level of usage of the resource that has been experienced during the billing interval;

generate, based on the usage information and an estimated request usage of the request, a usage metric for each resource of the plurality of resources;

generate an economic metric for each resource based on the cost information, the usage metric for each resource, and the request, a first economic metric being a first cost increase for a first resource of the plurality of resources if the first resource responds to the request, and a second economic metric being a second cost increase for a second resource of the plurality of resources if the second resource responds to the request; and

choose one of the plurality of the resources to respond to the request for data based on a comparison of the economic metric for each resource, by (1) comparing the first cost increase and the second cost increase to determine one of the first and second cost increases that has a lower cost increment, and (2) selecting one of the first resource and the second resource to respond to the request from the client based on the lower cost increment.

29. (Currently amended) A data communications device for selecting a resource from a plurality of resources to process a request from a client, the data communications device comprising:

means for maintaining cost information for a plurality of resources available to satisfy client requests via a plurality of resource providers, the cost information for each resource specifying a relationship between levels of usage of the resource in a billing interval and corresponding levels of prices charged by the respective resource provider in the billing interval;

means for maintaining usage information for the plurality of resources, the usage information for each resource specifying a level of usage of the resource that has been experienced during the billing interval;

means for generating, based on the usage information and an estimated request usage of the request, a usage metric for each resource of the plurality of resources;

means for generating an economic metric for each resource based on the cost information, the usage metric for each resource, and the request, a first economic metric being a first cost increase for a first resource of the plurality of resources if the first resource responds to the request, and a second economic metric being a second cost increase for a second resource of the plurality of resources if the second resource responds to the request; and

means for choosing one of the plurality of the resources to respond to the request for data based on a comparison of the economic metric for each resource, by (1) comparing the first cost increase and the second cost increase to determine one of the first and second cost increases that has a lower cost increment, and (2) selecting one of the first resource and the second resource to respond to the request from the client based on the lower cost increment.

30. (Currently amended) A computer program product that includes a computer readable medium having instructions stored thereon for selecting a resource from a plurality of resources to process a request from a client, such that the instructions, when carried out by a data communications device, cause the data communications device to

perform the steps of:

maintaining cost information for a plurality of resources available to satisfy client requests via a plurality of resource providers, the cost information for each resource specifying a relationship between levels of usage of the resource in a billing interval and corresponding levels of prices charged by the respective resource provider in the billing interval;

maintaining usage information for the plurality of resources, the usage information for each resource specifying a level of usage of the resource that has been experienced during the billing interval;

generating, based on the usage information and an estimated request usage of the request, a usage metric for each resource of the plurality of resources;

generating an economic metric for each resource based on the cost information, the usage metric for each resource, and the request, a first economic metric being a first cost increase for a first resource of the plurality of resources if the first resource responds to the request, and a second economic metric being a second cost increase for a second resource of the plurality of resources if the second resource responds to the request; and

choosing one of the plurality of the resources to respond to the request for data based on a comparison of the economic metric for each resource, by (1) comparing the first cost increase and the second cost increase to determine one of the first and second cost increases that has a lower cost increment, and (2) selecting one of the first resource and the second resource to respond to the request from the client based on the lower cost increment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kt
10/10/07

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